UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	09/245,442	BELLENGER, DONALD M.
	Examiner	Art Unit	
	Phuongchau Ba Nguyen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>06 March 2007</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☐ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-5,18-21,23-31 and 33-39* is/are rejected.

7) ☒ Claim(s) *6-17,22,32,40* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date. _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Allowable Subject Matter

1.   The indicated allowability of claims 12-29-2006 is withdrawn in view of

the newly discovered reference(s) to Kloth (6,842,453). Rejections based on the

newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in a patent granted on an application for patent by another
> filed in the United States before the invention thereof by the applicant for patent, or on an
> international application by another who has fulfilled the requirements of paragraphs (1), (2),
> and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors

Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology

Technical Amendments Act of 2002 do not apply when the reference is a U.S.

patent resulting directly or indirectly from an international application filed

before November 29, 2000. Therefore, the prior art date of the reference is

determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-

AIPA 35 U.S.C. 102(e)).

3.   Claims 1-3, 24, 27, 37 are rejected under 35 U.S.C. 102(e) as being

anticipated by Kloth (6,842,453).

Regarding 1,

        Kloth (6,842,453) discloses a method of switching an Ethernet packet

(fig.5), the method comprising:

        computing a tag (i.e., a hit in the shortcut table 700) for the Ethernet

packet, said tag computed using two or more fields in said packet, wherein said

fields are selected from Ethernet (i.e., MAC address) and network (i.e.,

destination) headers in said packet (step 508-fig.5);

        looking up the computed tag in a table (i.e., table 700), the table

containing entries associated with tags, the entries associating switching

information with a tag, said switching information defining a route through a

plurality of interconnected switch nodes (step 516-fig.5, see also col.7, lines 3-

12, 23-37); and

using said switching information associated with the computed tag from

the table to switch the packet, if there is an entry for the computed tag in the

table (steps 530-fig.5, if there is a shortcut found in the table 700, then

switching the packet).

Regarding claim 2, Kloth further discloses sending the packet to a system (i.e.,

switch 300) with resources (i.e., processing packet using shortcut technique,

col.6, lines 1-14) for routing a packet and for determining switching

information (i.e., as if the packet is the candidate packet or enable packet, see

fig.4).

Regarding claim 3, Kloth further discloses updating the table to include an

entry for the computed tag, and wherein the computed tag is associated with

the determined switching information (step 520-fig.5, see also col.8, line 66-

col.9, line 16, e.g., creating new shortcut as the frame's information changed).

Regarding claim 37,

Kloth further discloses wherein said fields used to compute said tag are

specified by a template, said template specifying fields for a particular protocol

(col.6, line 56-col.7, line 2 wherein the MAC address field could be identified by

a defined protocol).

Claim Rejections – 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived by
> the manner in which the invention was made.

5.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Kloth as applied to claim 2 above, and further in view of Griesmer (5,555,405).

Regarding claim 4,

Kloth discloses all the claimed limitations, except (1) an entry in the table

for the computed tag associated with a switching instruction indicating that

packets should be dropped until the determining of switching information is

complete.

However, in the same field of endeavor, Griesmer (5,555,405) discloses a

mutual exclusion circuit 91 for ensuring that the frame forwarding circuit 54

cannot access the hash table 90 while the packing process 80 is writing the

location of the new forwarding entry set to the pointer field of a hash table

entry, corresponding to (1). Therefore, it would have been obvious to a skilled

artisan to implement Griesmer's teaching of the mutual exclusion circuit 91

into the shortcut table of Kloth's system and the motivation being to prevent

from access either a partially written hash table entry or a partially copied

forwarding entry set {col.15, lines 15-21; fig.4c & 5}.

6.   Claims 5, 18-21, 23-24, 27-31, 34-36 are rejected under 35 U.S.C.

103(a) as being unpatentable over Kloth as applied to claim 1 above, and

further in view of Liu (6,018,526).

Regarding claim 23,

Kloth discloses a method (figs. 5-7) comprising:

computing a tag (i.e., xtag-fig.6) for an Ethernet packet, said tag

computed using at least two fields in said packet, wherein said fields are

selected from Ethernet (i.e., MAC address-fig.6) and network (i.e., destination

address) headers in said packet (step 508-fig.5);

looking up the computed tag in a table (i.e., table 700-fig.7), the table

comprised of entries, the entries associating information about packet flows

with tags (i.e., xtags 706-fig.7), the information including route information

specifying a route (i.e., I3_da 702 and I3_sa 704) through a plurality of

interconnected switch nodes (i.e., route between I3_sa and I3_da constituted a

plurality of switched nodes-emphasis added);

updating information about the packet flow associated with the

computed tag if there is an entry for the computed tag (i.e., step 520-fig.5,

wherein rewritten the frame's information changed into the respective entry of

table 700);

creating a new entry in the table if there is no entry for the computed tag

(i.e., fig.6 wherein creating a new xtag for a detected hardwire shortcut HW-SC

602 in forwarding table 600-fig.6); and

Kloth discloses all the claimed limitations, except (1) removing entries

that have not been accessed for a predetermined period from the table.

However, in the same field of endeavor, Liu (6,018,526) further discloses

table entries being updated periodically removing old entries, see col.6, lines

7-9, corresponding to (1). Therefore, it would have been obvious to an artisan

to apply Liu's teaching to Kloth's system with the motivation being to provide

an efficient, short and updated table with the most currently active entries for

routing data packet.

Regarding claim 24,

Kloth further discloses wherein the creating further comprises storing

data extracted from the packet in the entry (i.e., fig.6 wherein the xtag

associated with the MAC address (layer 2) stored in table 600 and associated

with l3_sa and l3_da (layer 3) stored in table 700.

Regarding claim 5,

Kloth discloses all the claimed limitations, except (1) wherein the entries

in the table are removed if the tag corresponding to the entry has not been

looked up in a predetermined period.

However, in the same field of endeavor, Liu (6,018,526) further discloses

table entries being updated periodically removing old entries, see col.6, lines

7-9, corresponding to (1). Therefore, it would have been obvious to an artisan

to apply Liu's teaching to Kloth's system with the motivation being to provide

an efficient, short and updated table with the most currently active entries for

routing data packet.

Regarding claim 27,

Kloth discloses all the claimed limitations, except (1) wherein the

removing further comprises transferring the data associated with a tag to a

system with resources for storing information.

However, in the same field of endeavor, Liu further discloses with an updated

table, by erasing old entries every 5 minutes, the destination address of the

packet arriving from a network segment being used to determine whether the

packet should be forwarded to another network segment based on the

indications in the table (i.e., tag) corresponding to the destination address,

corresponding to (1). Therefore, it would have been obvious to an artisan to

apply Liu's dynamic table updating technique to Kloth's system with the

motivation being to provide an effective forwarding data packet with short time

in processing.

Regarding claims 18 and 28,

Kloth discloses all the claimed limitations, except wherein the computing

further comprises using a mask of bits of the packet as a seed for a hash code

generator.

However, in the same field of endeavor, Liu (6,018,526) discloses that the

computing further comprises using a mask of bits (an 8-bit hash value; col.6,

lines 31-32) of the packet as a seed for a hash code generator (hash circuit 98).

Therefore, it would have been obvious to an artisan to apply Liu's hashing

technique to Kloth's system with the motivation being to fasten the forwarding

of the packet from one network segment to another.

Regarding claims 19 and 29,

Kloth discloses all the claimed limitations, except wherein the hash code

generator is a pseudo random number generator.

However, in the same field of endeavor, Liu (6,018,526) discloses that the

hash code generator (hash circuit 98) is a pseudo random number generator

{col.7, lines 34-36 wherein when a new packet arrives at port 92, the source

address of the packet 94 is hashed to create an 8-bit hash value, thus the 8-bit

hash value (i.e. 8-bit 219 & 220) was generated randomly in 0's and 1's

numbers by the hash circuit 98}. Therefore, it would have been obvious to an

artisan to apply Liu's hashing technique to Kloth's system with the motivation

being to fasten the forwarding of the packet from one network segment to

another.

Regarding claims 20 and 30,

Kloth discloses all the claimed limitations, except wherein the hash code

generator is a shift register with a feedback loop.

However, in the same field of endeavor, Liu (6,018,526) does not

explicitly disclose that the hash code generator is a shift register with a

feedback loop. Liu discloses generating an 8-bit hash value (i.e. 8-bit 219 &

220 in fig.10A wherein the 8-bit is generated randomly in 0 and 1 number).

Thus, the shift register with feedback loop is inherent in the hash generator for

generating the 8-bit of hash value in random 0's and 1's numbers. (see also

Prenell et al 5,664,016 for showing the inherent feature of hash function for

generating a hash value in bits using a shift register with feedback loop).

Therefore, it would have been obvious to an artisan to apply Liu's hashing

technique to Kloth's system with the motivation being to fasten the forwarding

of the packet from one network segment to another.

Regarding claims 21 and 31, Kloth discloses all the claimed limitations, except

wherein the hash code generator has a non-zero probability of generating the

same tag from different input packets.

However, in the same field of endeavor, Liu (6,018,526) discloses that the

hash code generator has a non-zero probability of generating the same tag

from different input packets {col.5, lines 46-48}. Therefore, it would have been

obvious to an artisan to apply Liu's hashing technique to Kloth's system with

the motivation being to fasten the forwarding of the packet from one network

segment to another.

7.   Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Kloth in view of Liu as applied to claim 24 above, and further in view of

Anderson (6,021,202).

Regarding claim 25,

Kloth discloses all the claimed limitations, except wherein the data

includes billing information for the packet (claim 25), and wherein the packet is

sent to a system with resources for analyzing the packet and determining

billing information to be associated with the entry for the computed tag (claim

26)

Anderson (6,021,202) discloses that the packet (electronic transaction;

i.e., electronic check or fund; col.7, lines 4-60) is sent to a system (bank) with

resources (figs.2, 6, 10, 16-17, 31, 42) for analyzing the packet and

determining billing information (i.e. signature, amount; fig.6) {claim 25} to be

associated with the entry for the tag (sha 132; fig.6){claim 26}. Therefore, it

would have been obvious to a skilled artisan to implement Anderson's teaching

of different types of electronic document utilized the hash technique into the

packet in Kloth's system and the motivation being to reduce costs of creating

and mailing a document, to control timing transaction, such as payments, both

through future dating of transaction, and to reduce fraud including forgery,

alternation, duplication, and fraudulent depositing {col.15, lines 39-52}.

Regarding claim 33, Kloth further discloses wherein said fields used to

computed said tag (i.e., xtag) are selected from Ethernet (i.e., MAC address,

fig.6) and network headers (i.e., destination address, fig.7) in said packet, see

also column 6, lines 33-39.

Regarding claim 34, Kloth further discloses wherein said fields used to compute

said tag are specified by a template, said template specifying fields for a

particular protocol (col.6, line 56-col.7, line 2 wherein the MAC address field

could be identified by a defined protocol)

Regarding claims 35-36, Kloth does not explicitly disclose wherein said

protocol is the real time protocol RTP (claims 35-36) or the hyper-text transfer

protocol HTTP (claims 38-39). However, since Kloth discloses the MAC address

field could be identified by a defined protocol, thus it would have been obvious

to define the protocol as RTP or HTTP for the Ethernet packet being transmitted

from one network segment to another corresponding to its network type.   The

motivation is being to provide switching using the shortcut technique for

different data packet types.

8.   Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kloth.

Regarding claims 38-39, Kloth does not explicitly disclose wherein said

protocol is the real time protocol RTP (claims 35-36) or the hyper-text transfer

protocol HTTP (claims 38-39). However, since Kloth discloses the MAC address

field could be identified by a defined protocol, thus it would have been obvious

to define the protocol as RTP or HTTP for the Ethernet packet being transmitted

from one network segment to another corresponding to its network type. The

motivation is being to provide switching using the shortcut technique for

different data packet types.

Allowable Subject Matter

9.   Claims 6-17, 22, 32, 40 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form

including all of the limitations of the base claim and any intervening claims.

10.   Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Phuongchau Ba Nguyen whose

telephone number is 571-272-3148. The examiner can normally be reached

on Monday-Friday from 10:00 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

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9199 (IN USA OR CANADA) or 571-272-1000.

Phuongchau Ba Nguyen
Examiner
Art Unit 2616

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